Dipobrato Sarbapalli

(217) 979-1550 • dipto032@gmail.com • linkedin.com/in/dipto032/ • dipto032.github.io

PATENTS

From Natrion Inc.

1. Alexander Kosyakov, Soheil Malekpour, Dipobrato Sarbapalli, Dah-shyang Tsai, Connor Kniaz. "Functional interphase stabilizer for battery electrodes", *US20240136588A1*, **2024**. [**Link**]

2. Alexander Kosyakov, Soheil Malekpour, Dipobrato Sarbapalli, Dah-shyang Tsai, Duke Po-chen Shih, Dillon Grant, Gavin Depew, Bruce Kraay. "Composite solid-state electrolyte and lithium batteries using the same", *US20240250288A1*, **2024**. [**Link**]

PUBLICATIONS

From Doctoral Thesis research

1. Jason Howard*, Dipobrato Sarbapalli*, Abhiroop Mishra, Nannan Shan, Garvit Agarwal, Jingjing Zhang, Michael J. Counihan, Lu Zhang, Rajeev S. Assary, Jason Howard, Larry A. Curtiss, Joaquín Rodríguez-López. "A Comparative Computational and Scanning Electrochemical Microscopy Study of Factors Influencing Electron Transfer at the Hydrogenated and Pristine Graphite - Propylene Carbonate Electrochemical Interface" *J. Mater. Chem. A.* **2025** *Manuscript under review*

2. Abhiroop Mishra, Dipobrato Sarbapalli, Oliver Rodríguez, Joaquín

Rodríguez-López. "Electrochemical Imaging of Interfaces in Energy Storage via Scanning Probe Methods: Techniques, Applications, and Prospects" *Annu. Rev. Anal. Chem.* **2023**, *16*, 93-115. DOI: 10.1146/annurev-anchem-091422-110703

3. Raghuram Gaddam*, Dipobrato Sarbapalli*, Jason Howard, Larry A. Curtiss, Rajeev S. Assary, Joaquín Rodríguez-López. "An SECM-based spot analysis for redoxmer-electrode kinetics: identifying redox asymmetries on model graphitic carbon interfaces" *Chem. Asian J.* **2023**, *18*, e202201120. DOI: 10.1002/asia.202201120

4. Dipobrato Sarbapalli, Yu-Hsiu Lin, Sean Stafford, Jangyup Son, Abhiroop Mishra, Jingshu Hui, A Nijamudheen, Adolfo I. B. Romo, Zachary T. Gossage, Arend M. van der Zande, Jose L. Mendoza-Cortes, Joaquín Rodríguez-López. "A Surface Modification Strategy Towards Reversible Na-ion Intercalation on Graphitic Carbon Using Fluorinated Few-Layer Graphene" *J. Electrochem. Soc.* **2022**, *169*, 106522. DOI: 10.1149/1945-7111/ac9c33

5. Abhiroop Mishra, Dipobrato Sarbapalli, Md. Sazzad Hossain, Zachary T. Gossage, Zheng Li, Alexander Urban and Joaquín Rodríguez-López. "Highly Sensitive Detection and Mapping of Incipient and Steady-State Oxygen Evolution from Operating Li-Ion Battery Cathodes via Scanning Electrochemical Microscopy" *J. Electrochem. Soc.* **2022**, *169*, 086501. DOI: 10.1149/1945-7111/ac857e

6. Yunxiong Zeng, Zachary T. Gossage, Dipobrato Sarbapalli, Jingshu Hui and Joaquín Rodríguez-López. "Tracking Passivation and Cation Flux at Incipient Solid-Electrolyte Interphases on Multi-Layer Graphene using High Resolution Scanning Electrochemical Microscopy" *ChemElectroChem* **2021**, *9*, e202101445. DOI:

10.1002/celc.202101445

7. Dipobrato Sarbapalli, Abhiroop Mishra and Joaquín Rodríguez-López. "Pt/Polypyrrole Quasi-References Revisited: Robustness and Application in Electrochemical Energy Storage Research" *Anal. Chem.* **2021**, *93*, 14048–14052. DOI: 10.1021/acs.analchem.1c03552

8. Zachary T. Gossage, Kendrich Hatfield, Yuanya Zhao, Raghuram Gaddam, Dipobrato Sarbapalli, Abhiroop Mishra and Joaquín Rodríguez-López. *Application to Batteries and Fuel Cells* in Scanning Electrochemical Microscopy, Taylor & Francis, **2022**. DOI: https://doi.org/10.1201/9781003004592

9. Dipobrato Sarbapalli, Abhiroop Mishra, Zachary T. Gossage, Kendrich Hatfield, and Joaquín Rodríguez-López. *Scanning Electrochemical Microscopy: A Versatile Tool for Inspecting the Reactivity of Battery Electrodes* in Batteries: Materials Principles and Characterization Methods, IOP Science, **2021**. DOI: 10.1088/978-0-7503-2682-7ch9

10. Abhiroop Mishra, Zachary T. Gossage, Dipobrato Sarbapalli, Yuanya Zhao, and Joaquín Rodríguez-López. *Methods and Instrumentation in Energy Storage* in Encyclopedia of Electrochemistry, Wiley-VCH, **2021**. DOI: 10.1002/9783527610426.bard030111

11. Jingshu Hui, A. Nijamudheen, Dipobrato Sarbapalli, Chang Xia, Zihan Qu, Jose L. Mendoza-Cortes, and Joaquín Rodríguez-López. "Nernstian Li^+ intercalation into few-layer graphene and its use for the determination of K^+ co-intercalation processes" *Chem. Sci.* **2021**, *12*, 559-568. DOI: 10.1039/D0SC03226C

12. Michael J. Counihan, Dipobrato Sarbapalli, and Joaquín Rodríguez-López. "Picture Your Electrode: A Primer on Scanning

Electrochemical Microscopy" *Electrochem. Soc. Interface.* **2020**, *29*, 30–32. DOI: 10.1149/2.f03203if

13. A. Nijamudheen, Dipobrato Sarbapalli, Jingshu Hui, Joaquín Rodríguez-López, and Jose L. Mendoza-Cortes. "Impact of Surface Modification on the Lithium, Sodium, and Potassium Intercalation Efficiency and Capacity of Few-Layer Graphene Electrodes" *ACS Appl. Mater. Interfaces.* **2020**, *12*, 19393–19401. DOI: 10.1021/acsami 9b23105

14. Zachary T. Gossage, Jingshu Hui, Dipobrato Sarbapalli, and Joaquín Rodríguez-López. "Coordinated mapping of Li^+ flux and electron transfer reactivity during solid-electrolyte interphase formation at a graphene electrode" *Analyst.* **2020**, *145*, 2631-2638. DOI: 10.1039/C9AN02637A

15. Tylan S. Watkins*****, Dipobrato Sarbapalli*****, Michael J. Counihan*****, Andrew S. Danis, Jingjing Zhang, Lu Zhang, Kevin R. Zavadil, and Joaquín Rodríguez-López. "A combined SECM and electrochemical AFM approach to probe interfacial processes affecting molecular reactivity at redox flow battery electrodes" *J. Mater. Chem. A* **2020**, *8*, 15734–15745. DOI: 10.1039/D0TA00836B

16. Jingshu Hui, Zachary T. Gossage, Dipobrato Sarbapalli, Kenneth Hernández-Burgos, and Joaquín Rodríguez-López. "Advanced Electrochemical Analysis for Energy Storage Interfaces" *Anal. Chem.* **2019**, *91*, 60–83. DOI: 10.1021/acs.analchem.8b05115

*Denotes equal contribution

From Masters Thesis research

17. Dipobrato Sarbapalli, Xu Chen, Leslie Struble and Paramita Mondal. "Salicylic acid extraction of sodium aluminosilicates" *J. Amer. Cer. Soc.* **2022**, *105*, 7003–7010. DOI: 10.1111/jace.18658

From Undergraduate research

18. Dipobrato Sarbapalli, Yash Dhabalia, Kaustav Sarkar and Bishwajit Bhattacharjee. "Application of SAP and PEG as curing agents for ordinary cement-based systems: impact on the early age properties of paste and mortar with water-to-cement ratio of 0.4 and above" *Eur. J. Environ. Civ. Eng.* 2017, 21, 1237-1252. DOI: 10.1080/19648189.2016.1160843

CONFERENCE PAPERS

1. Dipobrato Sarbapalli and Paramita Mondal, "Effect of TiO_2 and ZnO nanopowders on metakaolin-sodium hydroxide geopolymers" *Proceedings of the 41st International Conference on Advanced Ceramics and Composites*, **2018**, *38*, 251-262

POSTERS

1. Dipobrato Sarbapalli, Abhiroop Mishra and Joaquín Rodríguez-López. "Pt/Polypyrrole quasi-references revisited: Robustness and application in non-aqueous electrochemical energy storage research" *Turkey Run Analytical Chemistry Conference*, **2021**
2. Dipobrato Sarbapalli, Jingshu Hui, A. Nijamudheen, Jose L.

Mendoza-Cortes, and Joaquín Rodríguez-López. "Few-layer graphene as a versatile analytical platform for exploring reversible Na^+ charge storage aided by fluorine surface modifiers" Society of Electroanalytical Chemistry Poster Session, *PITTCON*, **2021**

3. Dipobrato Sarbapalli, Michael Counihan, Andrew Danis and Joaquín Rodríguez-López. "Application of electrochemical microscopy probe interfacial processes at redox flow battery electrodes" Society of Electroanalytical Chemistry Poster Session, *PITTCON*, **2020** (Best Poster Award)
4. Dipobrato Sarbapalli, Michael Counihan, Andrew Danis and Joaquín Rodríguez-López. "Understanding interactions of redox-active organic molecules with carbon electrodes" *Turkey Run Analytical Chemistry Conference*, **2019**

Google Scholar